

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Previously Presented) A method for controlling a printer that has a printing head for printing data, the method comprising the steps of:

examining a relationship of a position, in each printing pass, of each of a plurality of a pins provided in a vertical direction of the printing head to a plurality of raster lines to be printed in a predetermined printing range, based on a vertical resolution of the print data, when a unit of vertical transfer of the printing head is not a reciprocal of an integral vertical resolution of the print data, and a pitch of the pins of the printing head is not any one of an integral multiple of the vertical resolution and the reciprocal of the integral vertical resolution;

preparing a raster-line/pin-relationship table in which pins to be actuated for printing the raster lines to be printed are determined in each printing pass based on the relationship between the position of the pins and the raster lines;

determining a number of printing passes and a position of a print-starting raster line;

consulting the raster-line/pin-relationship table according to the determination;
and

printing the predetermined printing range by actuating the pins in each printing pass based on the raster-line/pin-relationship table,

the pitch of the pins of the printing head, the amount of the unit of vertical transfer of the printing head, the position of the print-starting raster line, and a number of passes in the horizontal direction required for printing the predetermined printing range.

2. (Original) The method for print-control of a printer according to claim 1, a plurality of the raster-line/pin-relationship tables being prepared according to the position of the print-starting raster line.

3. (Original) The method for print-control of a printer according to claim 2, the position of the print-starting raster line being determined based on the print data under a condition of the vertical resolution of the print data, the pitch of the pins of the printing head, and the unit of vertical transfer of the printing head.

4. (Original) The method for print-control of a printer according to claim 3, any one of the plurality of raster-line/pin-relationship tables being selected according to the position of the print-starting raster line which was determined.

5. (Original) The method for print-control of a printer according to claim 4, the pins used in each printing pass being actuated by consulting the selected raster-line/pin-relationship table.

6. (Previously Presented) A print-controlling device for a printer that has a printing head for printing data, the device comprising:

a raster-line/pin-relationship table describing pins to be actuated in each printing pass for printing raster lines to be printed based on a relationship between a position of the pins and the raster lines when a unit of vertical transfer of the printing head is not a reciprocal of an integral vertical resolution of the print data, and a pitch of the pins of the printing head is not any one of an integral multiple of the vertical resolution and the reciprocal of the integral vertical resolution, the printing performed by examining the relationship of the position, in each printing pass, of each of the plurality of the pins provided in a vertical direction of the printing head to the raster lines to be printed in a predetermined printing range;

a print data forming unit that forms the print data to be printed;

a printer driver that determines the position of a print-starting raster line and the number of printing passes, consults the raster-line/pin-relationship table, and outputs a pin driving signal for each driving pass according to the raster-line/pin-relationship table;

a printing head transferring unit that transfers the printing head to a predetermined position based on the signal from the printer driver; and

a data transmitting unit that transmits print data and information required for printing operation received from the printer driver;

the printing range based on the vertical resolution of the print data, the pitch of the pins of the printing head, an amount of a unit of vertical transfer of the printing head, the position of the print-starting raster line, and a number of passes in a horizontal direction required for printing the predetermined printing range.

7. (Original) The print-controlling device for a printer according to claim 6, a plurality of the raster-line/pin-relationship tables being prepared based on the variations of the position of the print-starting raster line.

8. (Original) The print-controlling device for a printer according to claim 7, the position of the print-starting raster line being determined by the print data, under conditions of the vertical resolution of the print data, the pitch of the pins of the printing head, and the unit of vertical transfer of the printing head.

9. (Original) The print-controlling device for a printer according to claim 8, the printer driver selecting one of the plurality of raster-line/pin-relationship tables based on the position of the print-starting raster line which was determined by the printer driver.

10. (Original) The print-controlling device for a printer according to claim 9, the pins used in each printing pass being actuated by consulting the selected raster-line/pin-relationship table.

11. (New) A method for controlling a printer that has a printing head for printing data, the method comprising the steps of:

examining a relationship of a position, in each printing pass, of each of a plurality of marking elements provided in a vertical direction of the printing head to a plurality of raster lines to be printed in a predetermined printing range, based on a vertical resolution of the print data, when a unit of vertical transfer of the printing head is not a reciprocal of an integral vertical resolution of the print data, and a pitch of the marking elements of the printing head is not any one of an integral multiple of the vertical resolution and the reciprocal of the integral vertical resolution;

preparing a raster-line/marketing element-relationship table in which marking elements to be actuated for printing the raster lines to be printed are determined in each printing pass based on the relationship between the position of the marking elements and the raster lines;

determining a number of printing passes and a position of a print-starting raster line;

consulting the raster-line/marketing element-relationship table according to the determination; and

printing the predetermined printing range by actuating the marking elements in each printing pass based on the raster-line/marketing element-relationship table,

the pitch of the marking elements of the printing head, the amount of the unit of vertical transfer of the printing head, the position of the print-starting raster line, and a number of passes in the horizontal direction required for printing the predetermined printing range.

12. (New) A print-controlling device for a printer that has a printing head for printing data, the device comprising:

a raster-line/marketing element-relationship table describing marking elements to be actuated in each printing pass for printing raster lines to be printed based on a relationship between a position of the marking elements and the raster lines when a unit of vertical transfer of the printing head is not a reciprocal of an integral vertical resolution of the print data, and a pitch of the marking elements of the printing head is not any one of an integral multiple of the vertical resolution and the reciprocal of the integral vertical resolution, the printing performed by examining the relationship of the position, in each printing pass, of each of the plurality of the marking elements provided in a vertical direction of the printing head to the raster lines to be printed in a predetermined printing range;

a print data forming unit that forms the print data to be printed;

a printer driver that determines the position of a print-starting raster line and the number of printing passes, consults the raster-line/marketing element-relationship table, and outputs a marking element driving signal for each driving pass according to the raster-line/marketing element-relationship table;

a printing head transferring unit that transfers the printing head to a predetermined position based on the signal from the printer driver; and

a data transmitting unit that transmits print data and information required for printing operation received from the printer driver;

the printing range based on the vertical resolution of the print data, the pitch of the marking elements of the printing head, an amount of a unit of vertical transfer of the printing head, the position of the print-starting raster line, and a number of passes in a horizontal direction required for printing the predetermined printing range.